

Date: Mon, 13 Sep 93 04:30:33 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V93 #42
To: Ham-Homebrew

Ham-Homebrew Digest Mon, 13 Sep 93 Volume 93 : Issue 42

Today's Topics:

 A silly question...
 LO isolation in upconverting rcvr
 Morse Keyboard replacement

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 10 Sep 93 18:33:08 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!sol.ctr.columbia.edu!
news.kei.com!ddsw1!indep1!clifto@network.ucsd.edu
Subject: A silly question...
To: ham-homebrew@ucsd.edu

In article <1993Sep4.224755.7687@news.uiowa.edu> drenze@icaen.uiowa.edu (Douglas J Renze) writes:

>wondering...just *what* does a capacitor do???? Yes, I know that, "a capacitor

 Although you suggested using email, I thought I'd post this anyway...

 One of the very best things you can do is to try to find a copy of
"Inside Electronics" by Monroe Upton. (Out of print; ask the library.)
Not only will you understand how capacitors work, you'll learn a great deal
more. I learned more from that book than from ten years' study of
electronics.

--

+-----+
| Cliff Sharp | clifto@indep1.chi.il.us OR clifto@indep1.uucp |

| WA9PDM | Use whichever one works |
+-----+

Date: 13 Sep 93 01:33:55 GMT
From: ogicse!uwm.edu!math.ohio-state.edu!darwin.sura.net!udel!
newsserv.cs.sunysb.edu!rick@network.ucsd.edu
Subject: LO isolation in upconverting rcvr
To: ham-homebrew@ucsd.edu

I am working on a design for a broadband up converting receiver architecture. For a while I had myself convinced that I could live without tracking frontend filters, at least until it became clear that LO leakage would be a problem. As is standard practice these days, I have a fairly strong first mixer specified, ie LO at about 13 dbm. The standard MCL mixers will give about 25 dB or so LO-> RF suppression and coupled with the first RF amp, I can see my way clear to about 35-40 dB total isolation which would put the LO leakage at the antenna connector at 13-40 = -27 dbm (too much). The LO is currently specified to produce RF+LO => IF, which puts its signal within the LPF passband in the frontend. I gather from looking at some existing designs that other designers setup their up converting designs to work as LO-RF = IF, which puts the LO signal well above the LPF passband. Here is the hitch: since the rcvr I am working on will operate 50 - 1000 MHz, with about 1200 MHz IF, my LO would have to cover 1250-2200 MHz which is pushing it a bit for a reasonable PLL design (eg prescaler availability). So it would seem that my options are to either split my coverage into a couple of bands and downconvert, or come up with a way of getting some more S12 in the frontend networks. My frontend amp is currently a MMIC, which has fairly rotten S12. A fet might get me further, though I would probably have to breakup the frontend into octave wide filter+amp combos to keep the gain managable as f -> 0. Advice anyone?

Rick Spanbauer, SUNY/Stony Brook

Date: 12 Sep 93 16:38:32 GMT
From: library.ucla.edu!agate!doc.ic.ac.uk!pipex!sunic!news.funet.fi!funic!
nnntp.hut.fi!vipunen.hut.fi!mnoromaa@network.ucsd.edu
Subject: Morse Keyboard replacement
To: ham-homebrew@ucsd.edu

In <40010001@opus.hpl.hp.com> walker@opus.hpl.hp.com (Rick Walker) writes:

>It recently occurred to me that a keyboard might be
>replaced with an iambic Morse keyer to reduce operator stress.

>Of course, there would need to be extensions made to Morse to send
>upper/lower case, control, escape, and all punctuation symbols.

Well, the problems of these were discussed in the newsgroup so I won't say anything further about them.

>So here's how I've thought about implementing this: Start with a
>single chip micro with a RS-232 port and program up an iambic keyer
>with a lookup table. When the user sends a character, the RS-232 port
>will echo the ASCII equivalent to the computer.

So the program would actually be an iambic keyer itself? No, it would be much too difficult to implement all those different timings used in different keyers. It's best just to connect an existing keyer so that it keys one pin of a COM or LPT-port. As you suggested:

>Alternatively, one could use a standard keyer circuit (Accukey or Curtis),
>and simply program up a Morse decoder. Does anyone have any ideas for
>algorithms for tracking the current dot/dash timing? You could remember
>the shortest and longest beep in the last few beeps and set the dot/dash
>timing threshold midway between, but there has to be more sophisticated
>algorithms.

I have created a program which I call CWREADER. Basically, it's intended to copy CW from a keyer to a contest-logging program. That would be handy when you are running a big contest-pileup and work much more comfortably with a keyer than with a computer (F1, INS, F5, etc). CWREADER reads characters from the keyer and inserts them into the keyboard type-ahead buffer from where a contest-program (like CT, NA, etc.) can read them. It can also do some tricks like detecting error-characters, suppressing the copy of CQ TEST, detecting 599 (--> makes the logging-program send the exchange), etc. etc.

I made CWREADER configurable in a large degree. All the keys it uses can be defined as appropriate for ANY contest-program. I also included some options to make it read CW from the keyer to DOS or some completely other programs. It copies spaces (length configurable) and there are even 16 user-configurable CW-characters: you can, for example, set the 'character' ---.--.--.--.--. print as "/QRP".

CWREADER is everything else than complete. If you have questions about it, feel free to send them to me, but if you would like a copy of the program, you may have wait for some time...

73 to all of you de Mikko OH3LIM

```
/*-----*/
/* Mikko Noromaa                ** Amateur radio callsign: OH3LIM */
/* email: Mikko.Noromaa@hut.fi  ** Pkt addr: OH3LIM@OH3RBA.#HML.FIN.EU */
```

/* or: mnoromaa@vipunen.hut.fi *****
/* Postal address: Kanavamaki 13 E 23, 00840 Helsinki, FINLAND */
/*****

Date: Sun, 12 Sep 1993 14:11:48 GMT
From: library.ucla.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!emory!
kd4nc!ke4zv!gary@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <1993Sep9.054942.11654@mksol.dseg.ti.com>, <1211@pig.UUCP>,
<1993Sep11.025426.1880@mksol.dseg.ti.com>
Reply-To : gary@ke4zv.UUCP (Gary Coffman)
Subject : Re: NASA select rcvr

In article <1993Sep11.025426.1880@mksol.dseg.ti.com> blair@mksol.dseg.ti.com
(arthur blair) writes:

>Great thread, eh?
>Sounds like a used block converter is the way to go alright.
>2 problems remain...
>The antenna. What is the typical gain of a 6-7 foot dish? Do you
>think I could get by with a horn? Assuming I could keep the
>birds from nesting in it, it would be easier to mount on the
>chimney and less intrusive.

Remember that you need to resolve satellites spaced 2 degrees apart.
A horn to do that would be bigger than a 6 foot dish. A 6 footer
barely does it.

>The IF output. Particularly demodulation. God but I dread the
>notion of buying a TV! It may sound silly (OK it probably
>does sound silly) but it's against my philosophy to even
>own one, much less turn it on. Are chips readily available
>to roll your own TV tuner? A single frequency unit ought to be
>simple enough. I dont want it to even LOOK like a TV.

>

>By the way. It sounds like the LNB's are pretty much self contained.
>What are those control (?) boxes they sell with them that sit on the
>TV inside. If the LO is fixed frequency, what more is there to do
>but turn it on and off?

>

>Does the IF bandwidth of the LNB occupy the entire UHF band?
>Do LNB's usually come with the feedhorns attached?

>

>If LNB's are so cheap why do new TVRO systems cost so much?
>Where's the expensive part?

Ok, I don't think you completely understand how the system works yet. Remember that TVRO signals are *FM* modulated. Ordinary TV is *AM* modulated. The LNB block downconverts the *entire* spectrum, either C band or K band to an IF frequency *band* in the 1 GHz range. There the box on top of the set, the *receiver*, then tunes an individual channel, FM detects it, and outputs video and audio, and/or *remodulates* it as AM on an RF modulator for reception on VHF channel 3 or 4 of an ordinary TV.

So if you have a *monitor* and an audio system, you don't need a TV to watch satellite signals. You just take the baseband audio and video *before* it's remodulated and use that.

There *aren't* any expensive parts to the system. The dishes are available new in the \$80-\$200 range, with mount, the LNBs are available new in the \$80-\$100 range, and the receivers are available new in the \$80-\$200 range. Or, as others have noted, you can find the components at fleamarkets for much less. Also, buying a *packaged* system can result in considerable savings. As I remarked, dealers at Dayton were selling complete C band systems for \$199, and even the Shack sells a system for \$599. That *is* cheap, no more than a decent TV or VCR. Systems get expensive only if you want remote motor drive antenna pointing, dual axis feeds, large dishes with their heavy concrete base mounts, descramblers for premium channels, etc. Then you can drop a grand or more for a system.

Gary

--

Gary Coffman KE4ZV	"If 10% is good enough	gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	for Jesus, it's good	uunet!rsiatl!ke4zv!gary
534 Shannon Way	enough for Uncle Sam."	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244	-Ray Stevens	

End of Ham-Homebrew Digest V93 #42
